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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,779	04/25/2000	Seong-Hwan Moon	06192.0116	8043

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EXAMINER	
KUMAR, SRILAKSHMI K	

ART UNIT	PAPER NUMBER
2675	20

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/556,779	MOON ET AL.	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003 and 22 September 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

The following is in response to Amendment C, filed, July 24, 2003 and the request for continued examination on September 22, 2003. Claims 1 and 9 have been amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al (US 6,388,651) in view of Hashimoto (US 5,973,660) and further in view of Yoshikawa et al (US 6,049,322).

As to independent claim 1, Kinoshita et al disclose in Figs. 1-4, a liquid crystal display (1) comprising, a signal processor (Fig. 3, item G/A) for generating and outputting a first image signal and a second image signal (out of the left and right of G/A), a driving control signal using

an image data (into 701b-708b)), a main control signal (into G/A), the driving control signal including a source driving control signal including a source driving control signal and a gate driving control signal (col. 1, line 64-col. 2, line 12);

and a power source all of which are supplied from an image supplying source; Kinoshita et al does not state a power source. It would have been obvious to one of ordinary skill in the art that a power source is present as it is required in order for the liquid crystal display to operate.

a data signal driver for generating and outputting a data signal (out of 701b-708b) from the first image signal and the second image signal, the gray scale voltage and the source driving control signal all of which are input from said signal processor;

a printed circuit board having a plurality of wires for transmitting the signals and/or voltages of said signal processor to the data signal driver (Fig. 6, col. 1, line 64-col. 2, line 12);

a gate signal driver for generating and outputting a gate signal from the gate voltage and the gate driving control signal of said signal processor (col. 2, lines 55-64);

a liquid crystal display panel (100) for displaying an image formed by receiving the data signal from said data signal driver and the gate signal from said gate signal driver (col. 2, lines 55-64);

wherein the plurality of wires comprises a first group of wires for transmitting the first image signal and a second group of wires for transmitting the second image signal (Fig. 3, a plurality of wires grouped on the left and on the right of G/A), and the first group of wires are entirely spaced apart from the second group of wires (col. 1, line 64-col. 2, line 12, col. 3, lines 7-27));

wherein the data signal driver includes two groups of the data signal driver outputting a data signal from the first and the second image signal, one of which the let side of the signal processor and the other which is the right side of the processor (Fig. 3, col. 3, lines 7-27).

Kinoshita et al fail to disclose a gray scale voltage. Hashimoto discloses a matrix liquid crystal display including gray level voltage (Fig. 1, item 6) and a gray level voltage generator (16). It would have been obvious to incorporate the features of Hashimoto into that of Kinoshita et al as they both disclose LCD displays. The addition of the features of Hashimoto is advantageous as it consumes less power and is more efficient.

Kinoshita et al and Hashimoto fail to disclose where the first image signal and second image signal are simultaneously output. Yoshikawa et al disclose a first image signal and a second image signal output out of 7 and 9 respectively. In col. 2, lines 9-25 and 34-36, Yoshikawa et al disclose where the image signals must be output simultaneously. It would have been obvious to incorporate this feature into Kinoshita et al as having image signals simultaneously input would produce improved images.

As to independent claim 9, limitations of claim 1, and further comprising, wherein the data signal driver comprises at least four source drive integrated circuits and is physically, electrically connected to said liquid crystal display panel by a connecting member mounting the source drive integrated circuits one to one, wherein the connecting member includes a first group of connecting member and a second group connecting member, the first group of connecting member being connected with the first group of wires and the second group connecting member being connected with the second group of wires (Fig. 3, col. 1, line 64-col. 2, line 28, col. 3, lines 7-27).

Kinoshita et al and Hashimoto fail to disclose where the first image signal and second image signal are simultaneously output. Yoshikawa et al disclose a first image signal and a second image signal output out of 7 and 9 respectively. In col. 2, lines 9-25 and 34-36, Yoshikawa et al disclose where the image signals must be output simultaneously. It would have been obvious to incorporate this feature into Kinoshita et al as having image signals simultaneously input would produce improved images.

As to dependent claim 2, see limitation of claim 9, above.

As to dependent claims 3 and 10, limitations of claims 2 and 9, and further comprising, wherein the first image signal includes a first clock signal (Fig. 3, item LCK-L) and the second image signal includes a second clock signal (Fig. 3, item LCK-R), and the first clock signal and the second clock signal have a frequency half of a clock signal frequency supplied from the image supplying source (col. 5, lines 3-50)

As to dependent claims 4 and 11, limitations of claims 2 and 9, and further comprising, wherein the first image signal includes a first shift signal and the second image signal includes a second shift signal, the first and second shift signals being respectively applied to a source drive integrated circuit of a corresponding group of the source drive integrated circuits such that the group of the source drive integrated circuits have the same phase (col. 4, lines 8-24).

As to dependent claim 5, limitations of claim 2, and further comprising, wherein the first image signal includes a first drive signal and the second image signal includes a second drive signal, the first and second drive signals being respectively applied to a source drive integrated circuit of a corresponding group of the source drive integrated circuits such that the group of the source drive integrated circuits have the same phase (col. 3, lines 7-27).

As to dependent claims 6 and 12, limitations of claims 2 and 9, and further comprising, wherein the first group of wires and the second group of wires are branched from a wire aggregation including a plurality of wires at a selected position (Figs. 3 and 4).

As to claims 7 and 8, see claim 1.

Response to Arguments

4. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

The newly added prior art, Yoshikawa et al disclose a first image signal and a second image signal output out of 7 and 9 respectively. In col. 2, lines 9-25 and 34-36, Yoshikawa et al disclose where the image signals must be output simultaneously.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Srilakshmi K. Kumar** whose telephone number is **(703) 306 5575**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703 305 47000377.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703 305 9720. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9314 for regular communications and 703 308 9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 4700.

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
November 2, 2003

STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600